

WHAT IS CLAIMED IS:

1. A magnetic sensor switch comprising:

an elongated magnetic sensor having magnetic poles contrary
5 to each other at opposite ends thereof and mounted for rotation
through predetermined angles in clockwise and counter-clockwise
directions;

a movable contact piece including a pair of contact blades;

a pair of fixed contact pieces located in opposition to said pair
10 of contact blades of said movable contact piece, respectively;

a common contact piece electrically connected to the movable
contact piece;

a driving member transmitting the movement of said magnetic
sensor to the movable contact piece;

15 an auxiliary magnet located on a longitudinal extension line of
the magnetic sensor and mounted such that it can be moved toward
and away from one of the magnetic poles of the magnetic sensor;

a first magnetic member located at a predetermined position
outside of the rotating radius of the magnetic sensor and in the vicinity
20 of said one magnetic pole; and

a second magnetic member located at a predetermined position
outside of the rotating radius of the magnetic sensor and in the vicinity
of the other magnetic pole.

25 2. The magnetic sensor switch as set forth in claim 1, wherein

said magnetic sensor is a generally cylindrical member comprising a
cylindrical central body made of a magnetic substance, a first magnet
affixed to said cylindrical central body at one of the opposite ends

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thereof, and a second magnet affixed to said cylindrical central body at the other of the opposite ends thereof;

said driving member comprising a movable contact piece driving section in the form of an elongated plate, and an actuating section formed integrally with said movable contact piece driving section and extending upwardly from one lateral side edge of the middle portion of the movable contact piece driving section;

said movable contact piece comprising an elongated electrically conductive plate-like member of a rectangular shape in a plan view, a tongue formed transversely in the central portion of said plate-like member, first and second contact blades formed in the longitudinal direction of the plate-like member in the opposite side regions adjoining said central portion of the plate-like member and extending in the opposite directions to each other, and generally circular depending portions depending from the opposite side edges of the central portion of the plate-like member;

each of said fixed contact pieces comprising a contact portion adapted to contact with the corresponding contact blade of the movable contact piece and a terminal portion formed integrally with and folded from said contact portion; and

said common contact piece comprising an elongated plate-like contact portion and a common terminal portion formed integrally with and folded from said contact portion, said contact portion of the common contact piece being formed with through-holes into which rotary shafts for rotatably supporting said magnetic sensor, said driving member, and said movable contact piece should be inserted, respectively.

3. The magnetic sensor switch as set forth in claim 1, wherein said magnetic sensor is a generally cylindrical magnet having N magnetic pole at one of the opposite ends thereof and S magnetic pole at the other of the opposite ends thereof;

5 said driving member comprising a movable contact piece driving section in the form of an elongated plate, and an actuating section formed integrally with said movable contact piece driving section and extending upwardly from one lateral side edge of the middle portion of the movable contact piece driving section;

10 said movable contact piece comprising an elongated electrically conductive plate-like member of a rectangular shape in a plan view, a tongue formed transversely in the central portion of said plate-like member, first and second contact blades formed in the longitudinal direction of the plate-like member in the opposite side regions adjoining said central portion of the plate-like member and extending in the opposite directions to each other, and generally circular depending portions depending from the opposite side edges of the central portion of the plate-like member;

15 each of said fixed contact pieces comprising a contact portion adapted to contact with the corresponding contact blade of the movable contact piece and a terminal portion formed integrally with and folded from said contact portion; and

20 said common contact piece comprising an elongated plate-like contact portion and a common terminal portion formed integrally with and folded from said contact portion, said contact portion of the common contact piece being formed with through-holes into which rotary shafts for rotatably supporting said magnetic sensor, said driving member, and said movable contact piece should be inserted,

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respectively.

4. The magnetic sensor switch as set forth in claim 1, wherein
said auxiliary magnet acts such that it provides an attracting force and
a repulsive force to said one magnetic pole of said magnetic sensor to
rotate the magnetic sensor through the predetermined angle in one
direction, thereby to hold the magnetic sensor in standby position in
which it is stationary at an inclined position tilted from the horizontal
position; and

said first and second magnetic members acting to provide
attracting forces to the corresponding magnetic poles of the magnetic
sensor thereby to impart an instantaneous snapping force to the
magnetic sensor when the magnetic sensor rotates in a reverse
direction.